

LM-79

Test Report

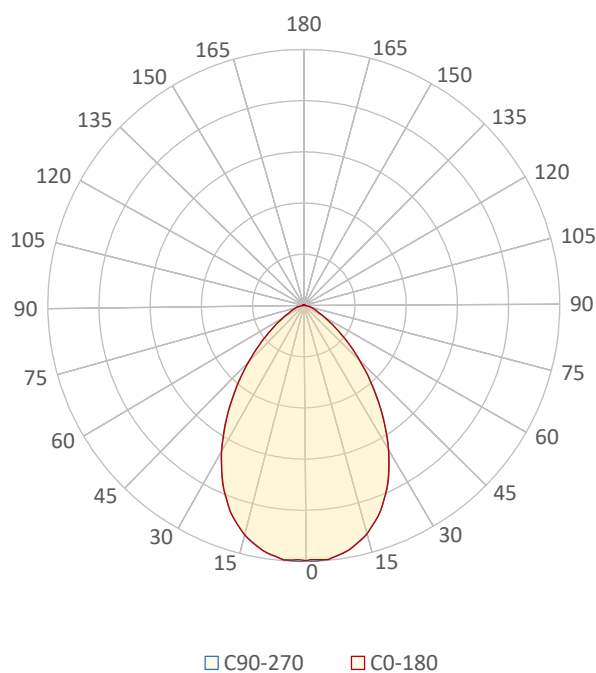
LM79-JADE-EXPO-2700K-CRI90-SPOT+ 70° beamshaper

General Discription

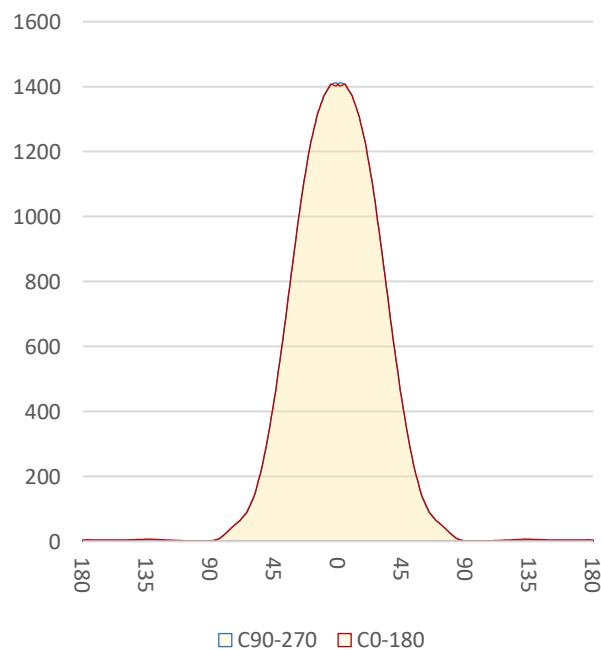
Item number	J-EX-X-3-1-27-90-1
Date and time	16-10-2017 13:28:34
CCT (Kelvin)	2770 K
Beam angle	72,9°
Luminous flux	2143 lm
Efficiency	78 lm/watt
Weighted energy	27,5 kWh/1000h
Power factor	0,93
CRI (RA)	93,2
Fidelity index Rf	Rf 91,6
Gammut index Rg	Rg 101,1
Peak	1412 cd



Polar diagram



Cartesian diagram



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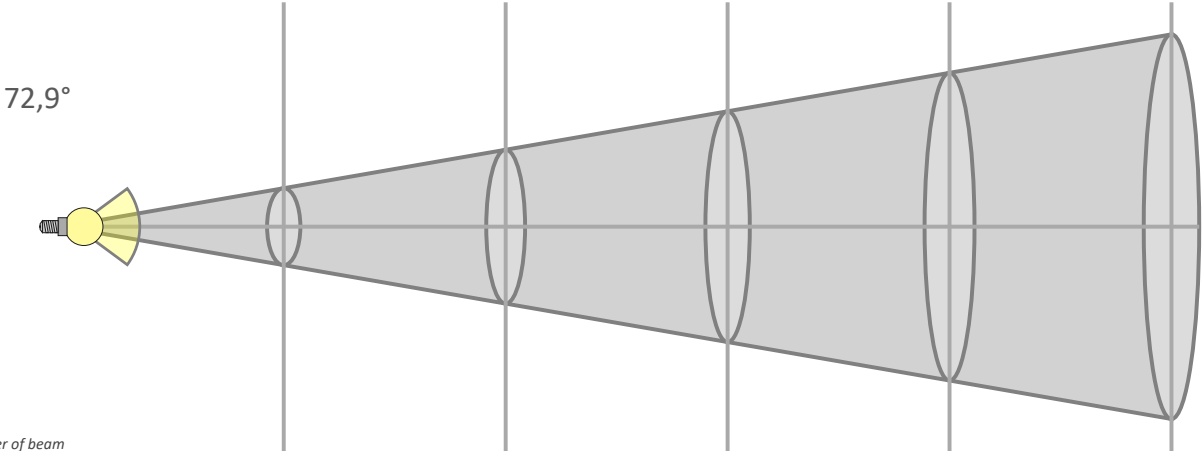
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Beam details	1m	2m	3m	4m	5m
Lux*	1407 lx	352 lx	156 lx	88 lx	56 lx



72,9°

*measured at center of beam

Footcandles*	130,7 fcd	32,7 fcd	14,5 fcd	8,2 fcd	5,2 fcd
Beam width (meter)	1,5 m	3 m	4,4 m	5,9 m	7,4 m
Beam width (Feet)	4,8 ft	9,7 ft	14,5 ft	19,4 ft	24,2 ft

Beam intensities																			
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
1407lx	352lx	156lx	88lx	56lx	39lx	29lx	22lx	17lx	14lx	12lx	10lx	8lx	7lx	6lx	5lx	5lx	4lx	4lx	4lx
3,3ft	6,6ft	9,8ft	13,1ft	16,4ft	19,7ft	23ft	26,2ft	29,5ft	32,8ft	36,1ft	39,4ft	42,7ft	45,9ft	49,2ft	52,5ft	55,8ft	59,1ft	62,3ft	65,6ft
130,7fcd	32,7fcd	14,5fcd	8,2fcd	5,2fcd	3,6fcd	2,7fcd	2fcd	1,6fcd	1,3fcd	1,1fcd	0,9fcd	0,8fcd	0,7fcd	0,6fcd	0,5fcd	0,5fcd	0,4fcd	0,4fcd	0,3fcd

Intensities in 0° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1407	1408	1372	1307	1211	1079	922	751	585	436	308	205	132	87	61	42	22	6	2	2
100%	100%	97%	93%	86%	77%	65%	53%	42%	31%	22%	15%	9%	6%	4%	3%	2%	0%	0%	0%

Intensities in 90° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1407	1406	1370	1306	1210	1082	925	756	589	436	306	202	128	84	60	42	21	6	1	1
100%	100%	97%	93%	86%	77%	66%	54%	42%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%

Intensities in 180° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1407	1408	1372	1307	1211	1079	922	751	585	436	308	205	132	87	61	42	22	6	2	2
100%	100%	97%	93%	86%	77%	65%	53%	42%	31%	22%	15%	9%	6%	4%	3%	2%	0%	0%	0%

Intensities in 270° c-plane																			
0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°
1407	1406	1370	1306	1210	1082	925	756	589	436	306	202	128	84	60	42	21	6	1	1
100%	100%	97%	93%	86%	77%	66%	54%	42%	31%	22%	14%	9%	6%	4%	3%	2%	0%	0%	0%

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%	Intensity ratio in 120° cone	Intensity ratio in 90° cone
72,9°	117,9°	153,2°	92,5%	76,9%



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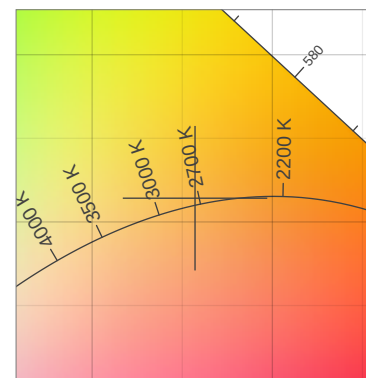
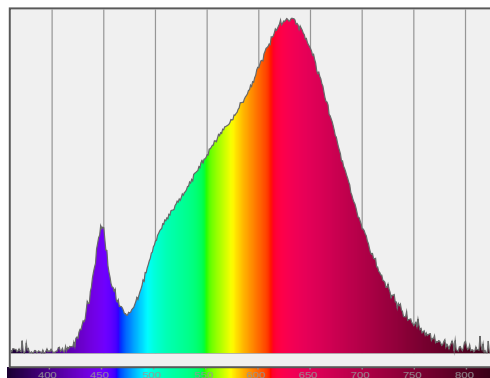
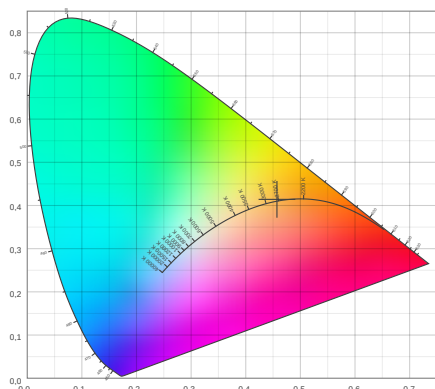
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Color details



CIE 1931

x: 0,457



Spectra

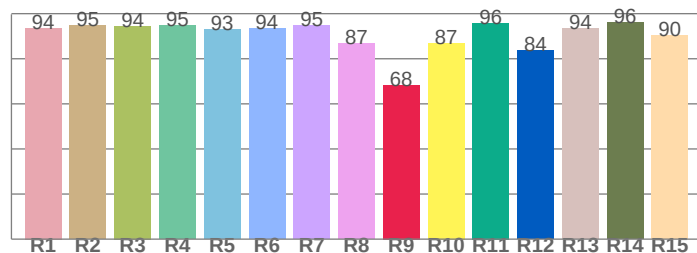
CIE 1931 ZOOM

2770 K

y: 0,414

Δuv: 0,0016

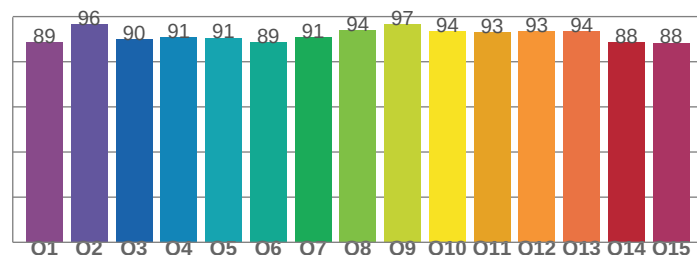
CRI: 93,2 (R1-R8)



CRI values, R1-R8 are used to calculate final CRI value

R1	R2	R3	R4	R5	R6	R7	R8
93,6	94,7	94,5	94,8	92,9	93,5	94,8	86,8
R9	R10	R11	R12	R13	R14	R15	
68,3	87,0	95,9	83,6	93,6	96,1	90,3	

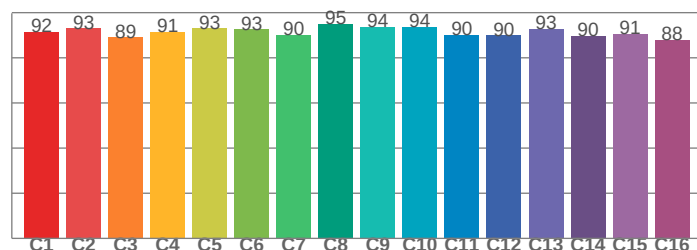
CQS: 91,3



CQS values

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8
88,5	96,5	90,0	91,0	90,6	88,7	90,8	94,1
Q9	Q10	Q11	Q12	Q13	Q14	Q15	
96,6	93,5	93,2	93,4	93,6	88,4	88,4	

TM30: 91,6



TM30 values, 16 binned values out of total of 99 values

C1	C2	C3	C4	C5	C6	C7	C8
91,5	93,0	89,1	91,4	93,0	92,6	90,0	95,1
C9	C10	C11	C12	C13	C14	C15	
93,5	93,6	90,1	89,8	92,7	89,8	90,7	

Color parameters

Color temperature	Color rendering index	Red component	Color fidelity	Color gamut	Color quality scale	Color coordinate cie 1931	Color coordinate cie 1931	Color coordinate	Color coordinate	Color deviation from black body
CCT	CRI	CRI R9	TM30 Rf	TM30 Rg	CQS	x	y	u	v	Δuv
2770 K	93,2	68,3	91,6	101,1	91,3	0,457	0,414	0,259	0,352	0,0016



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beamshaper

TM30 details

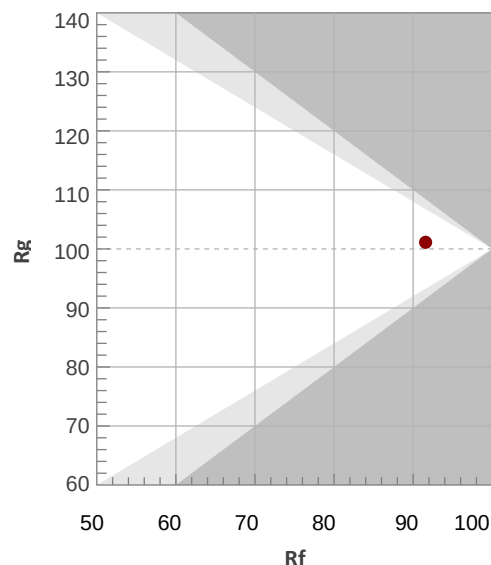
Rf 91,6

Fidelity index Rf

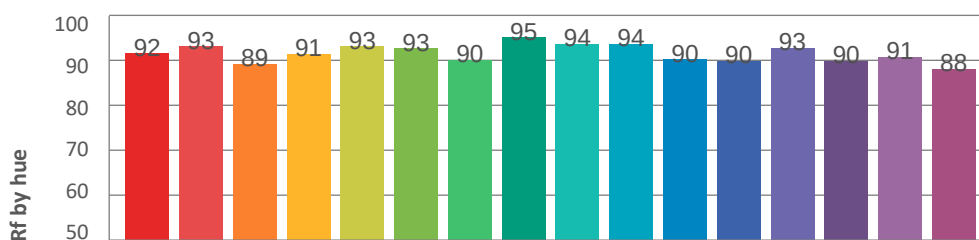
Rg 101,1

Gamut index Rg

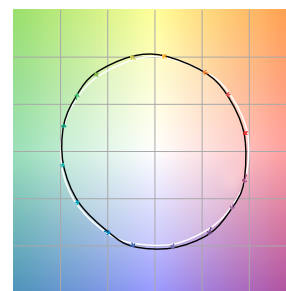
Hue Bin	R _f	Graphic shifts (%)	
		Chroma	Hue
1	92	-4%	-2%
2	93	-3%	2%
3	89	-1%	5%
4	91	2%	4%
5	93	4%	4%
6	93	4%	0%
7	90	2%	-5%
8	95	0%	-3%
9	94	-2%	-3%
10	94	-3%	1%
11	90	-1%	6%
12	90	3%	2%
13	93	4%	-2%
14	90	5%	-6%
15	91	1%	-5%
16	88	-1%	-8%



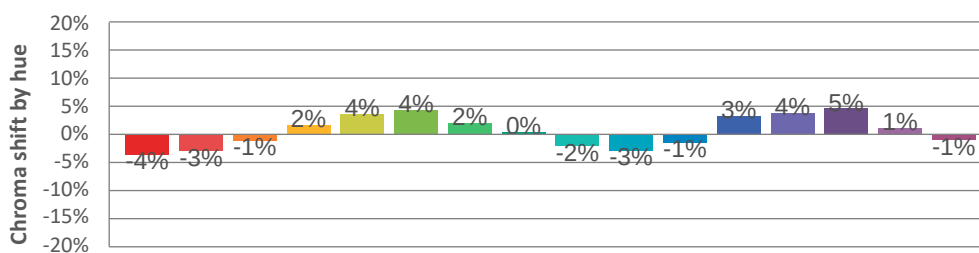
Hue binH



Color vector graphics



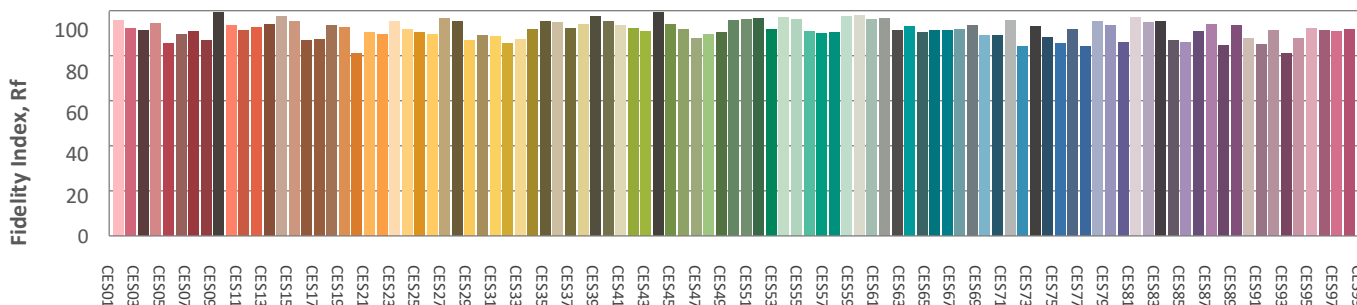
Hue bin



Color distortion graphics



Color Evaluation Sample



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Glare Evaluation According to UGR

p Ceiling		70	70	50	50	30	70	70	50	50	30
p Walls		50	30	50	30	30	50	30	50	30	30
p Floor		20	20	20	20	20	20	20	20	20	20
Room size X Y		Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	27,3	28,2	27,6	28,5	28,7	27,3	28,2	27,6	28,5	28,7
	3H	27,6	28,5	28,0	28,8	29,1	27,6	28,5	28,0	28,8	29,1
	4H	27,8	28,6	28,2	28,9	29,2	27,8	28,6	28,2	28,9	29,2
	6H	27,9	28,7	28,3	29,0	29,3	27,9	28,7	28,3	29,0	29,3
	8H	27,9	28,7	28,3	29,0	29,3	27,9	28,7	28,3	29,0	29,3
	12H	27,9	28,6	28,3	28,9	29,3	27,9	28,6	28,3	28,9	29,3
4H	2H	27,4	28,2	27,7	28,5	28,8	27,4	28,2	27,7	28,5	28,8
	3H	27,9	28,6	28,3	29,0	29,3	27,9	28,6	28,3	29,0	29,3
	4H	28,2	28,8	28,6	29,2	29,6	28,2	28,8	28,6	29,2	29,6
	6H	28,4	28,9	28,8	29,3	29,7	28,4	28,9	28,8	29,3	29,7
	8H	28,4	28,9	28,9	29,3	29,7	28,4	28,9	28,9	29,3	29,7
	12H	28,4	28,8	28,9	29,3	29,7	28,4	28,8	28,9	29,3	29,7
8H	4H	28,3	28,8	28,7	29,2	29,6	28,3	28,8	28,7	29,2	29,6
	6H	28,5	28,9	29,0	29,3	29,8	28,5	28,9	29,0	29,3	29,8
	8H	28,6	28,9	29,1	29,4	29,9	28,6	28,9	29,1	29,4	29,9
	12H	28,6	28,9	29,1	29,3	29,9	28,6	28,9	29,1	29,3	29,9
12H	4H	28,3	28,7	28,7	29,1	29,6	28,3	28,7	28,7	29,1	29,6
	6H	28,5	28,8	29,0	29,3	29,8	28,5	28,8	29,0	29,3	29,8
	8H	28,6	28,8	29,1	29,3	29,9	28,6	28,8	29,1	29,3	29,9

Variation of the observer position for the luminaire distance S

S = 1,0H	+0,5 / -1,0	+0,5 / -1,0
S = 1,5H	+1,3 / -1,9	+1,3 / -1,9
S = 2,0H	+2,6 / -2,7	+2,6 / -2,7
Standard table	BK02	BK02
Correction summand	10,5	10,5

Corrected glare indices referring to 2143lm total luminous flux



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